UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,674	12/31/2001	Rahul Aggarwal	04906.P105	4068

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EXAMINER
ALAM, UZMA

ART UNIT	PAPER NUMBER
2157	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	10/036,674	AGGARWAL ET AL.
Office Action Summary	Examiner	Art Unit	
	Uzma Alam	2157	.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-14,18-21 and 56-58* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-14,18-21 and 56-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

This action is responsive to the arguments and amendments filed on April 12, 2006.

Claims 9-14, 18-21 and 56-58 are pending. Claims 9-14, 18-21 and 56-58 represent a method

for representing label switched paths.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

2.   Claims 9-14, 18-21 and 56-58 are rejected under 35 U.S.C. 102(e) as being anticipated by

Hama US Patent Publication No. 2004/0202171. Hama teaches the invention as claimed

including a method for forming label switched paths.

As per claim 9, Hama teaches a method for a network element comprising:

maintaining for network layer switched routes interface structures each storing a set of network layer information (pp 13 and 86; Figures 2 and 9-12);

distributing each of the interface structures to a set of one or more of a plurality of routing protocol modules (distributing interface values to the routing modules; pp 17, 73, and 85);

maintaining a routing information base responsive to the plurality of routing protocol modules (mpls network routing table; pp 18, 84, 89);

distributing forwarding information bases to each of a plurality of line cards (the converter sending the information to the line card; pp 72, 74, 84, 86);

maintaining for each label switched path (LSP) a forwarding data structure that is separate from the interface structures and that does not include the set of network layer information (pp 14); and

distributing different ones of the forwarding data structures to different ones of the plurality of line cards apart from distribution to the plurality of routing protocol modules and the routing information base (pp 72 and 87).

As per claim 10, Hama teaches the method of claim 9 wherein the forwarding data structure includes a first field to indicate a port, a second field to indicate a slot, and a third field to indicate a flow (pp 10, 11, 88, 90 and 91, Figures 10-12).

As per claim 11, Hama teaches the method of claim 10 wherein the port is a virtual port and the slot is a virtual slot (pp 20)

As per claim 12, Hama teaches the method of claim 9 further comprising maintaining for each forwarding structure, a data structure that indicates an egress slot and encapsulation information (pp 58).

As per claim 13, Hama teaches the method of claim 12 wherein the data structure further indicates an egress port (pp 10, 11, 88, 90, 91 and Figures 10-12).

As per claim 14, Hama teaches the method of claim 12 further comprising distributing the egress slot and encapsulation information from different ones of the data structures to different ones of the line cards apart from distribution to the plurality of routing protocol modules and the routing information base (pp 10, 11, 88, 90, 91 and Figures 10-12).

As per claim 18, Hama teaches a network element comprising:

a plurality of line cards (Figure 2 (128));

a control card having stored therein, a plurality of interface structures having stored therein network layer information (Figure 2 (129));

a plurality of routing protocol modules coupled to one or more of the plurality of interface structures (routing protocol; pp 13, 86, Figure 2, and 9-12);

a routing information base coupled to said plurality of routing protocol modules (mpls

network routing table; pp 17, 73, 85);

a plurality of forwarding data structures separate from the interface data structure, the

plurality of forwarding data structures each having stored therein information to determine

forwarding of packets from an ingress one of said plurality of line cards to an egress one of said

plurality of line cards, wherein a set of one or more of said plurality of forwarding data structures

include data indicating that they represent a label switched path (pp 18, 84, 89);

a first of said plurality of line cards having stored therein, a label forwarding information base

generated from at least certain of said plurality of forwarding data structures indicating that they

represent label switched paths; and a network layer forwarding information base generated from

said routing information base (pp 14, 72, 87).

As per claim 19, Hama teaches the network element of claim 18 wherein said information

includes a slot identifier, a port identifier, and a flow identifier (pp 10, 11, 88, 90, 91 and Figures

10-12).

As per claim 20, Hama teaches the network element of claim 19 wherein the slot

identifier of each forwarding structure indicates the same virtual slot and the port identifier for

each forwarding structure indicates the same virtual port (pp 10, 11, 88, 90, 91 and Figures 10-

12).

As per claim 21, Hama teaches the network element of claim 18 wherein the control card

further has stored therein a plurality of data structures, different ones of the plurality of data

structures indicating different ones of said plurality of forwarding structures, egress slots, and

encapsulation information (pp 10, 11, 88, 90, 91 and Figures 10-12).

As per claim 56, Hama teaches the machine-readable medium that provides instructions,

which when executed by a set of one or more processors, cause said set of processors to perform

operations comprising:

maintaining in a control plane a first data structure that represents a label switched path

(LSP), the first data structure indicating a virtual port, a virtual slot, and an identifier to

distinguish LSPs of the virtual port and the virtual slot (pp 2, Figures 13-15, pp 16 and 84);

maintaining in the control plane a second data structure indicating the first data structure,

a slot, encapsulation information, and an index for the slot and the encapsulation information (pp

17 and 85);

distributing the first data structure, the index, and the egress to certain of a set of one or

more label forwarding information bases (LFIBS) in a data plane (pp 18, and 86);

distributing the index and the encapsulation information to certain of a set of data

structures within the data plane (pp 19 and 87).

As per claim 57, Hama teaches the machine-readable medium of claim 56 wherein the

second data structure further indicates a port (pp 10, 11, 88, 90, 91 and Figures 10-12).

As per claim 58, Hama teaches the machine-readable medium of claim 56 wherein the encapsulation information includes an egress label (pp 10, 11, 88, 90, 91 and Figures 10-12).

Response to Arguments

3.   Applicant's arguments filed April 12, 2006 have been fully considered but they are not persuasive.

4.   Applicant argues that Hama does not teach or suggest maintaining an interface structure separate from the forwarding data structure or maintaining a label switched path data structure indicating a virtual port and/or virtual slot.

5.   As per applicant's argument that Hama does not teach or suggest maintaining an interface structure separate from the forwarding data structure, Applicant is directed to paragraph 0027 and Figure 9 of Hama. In this cited portion of the reference, Hama teaches that the data structures that the forwarding data structure of the claim is represented by the routing tables of Hama as shown in Figure 9 and the interface structure of the claim is represented by the VPN label table. These two structures as shown in Figure 9 are separate structures.

6.   As per applicant's arguments that Hama does not teach indicating virtual port and/or virtual slot, Applicant is directed to paragraph 0006 of Hama. In this portion of the reference, Hama teaches that multiple VPNs are created by a few ports, which indicates the use of multiple ports.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Morgan US Patent No. 5,524,254

Soloway US Patent No. 5,265,092

Pegrum US Patent Publication No. 2003/0198182

Any inquiry concerning this communication or earlier communications from the examiner should be directed to 3 whose telephone number is (571) 272-3995. The examiner can normally be reached on Monday-Tuesday 5:30 AM - 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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June 15, 2006

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